



蔡伯根

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## 个人简介

### 基本情况

姓名:	蔡伯根
职务:	处长
职称:	教授
学历:	研究生
学位:	博士
通信地址:	北京交通大学电子信息工程学院
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### 教育背景

教育背景:

1987, 1990, 2010于北京交通大学获工学学士、硕士、博士学位

工作经历:

2011/07-至今, 北京交通大学, 电子信息工程学院/科学技术处, 教授, 处长

2009/04-2011/06, 北京交通大学, 电子信息工程学院, 教授, 副院长

2002/07-2009/03, 北京交通大学, 电子信息工程学院, 教授

1996/09-2002/06, 北方交通大学, 电子信息工程学院, 副教授

1990/09-1996/06, 北方交通大学, 通信与控制工程系, 助教、讲师

### 工作经历

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### 研究方向

智能交通系统的信息与控制技术

轨道交通自动化与控制

控制工程(专业学位)

计算机技术(专业学位)

软件工程(专业学位)

模式识别与智能系统

电子与信息(专业学位)

### 招生专业

交通信息工程及控制硕士
控制工程硕士
计算机技术硕士

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软件工程硕士  
控制科学与工程博士  
交通信息工程及控制博士  
电子与信息博士

### 科研项目

1. 国家自然科学基金“重点”:基于自主感知的列车运行安全控制和保障理论与方法,2014-01-01--2017-12-31,270.0万元,主持
2. 国家国际科技合作专项:基于卫星导航的列车运行控制技术合作研究,2014-04-1--2017-03-31,420.0万元,主持
3. 科技部“863”:车路协同系统仿真、测试与验证关键技术,2011-01-01--2013-12-31,274.0万元,参加
4. 教育部博士点专项科研基金(博导类):基于多模式卫星导航系统的列车安全定位理论与方法,2013-01-01--2015-12-31,12.0万元,主持
5. 铁道部科技司:北斗卫星导航系统在铁路应用研究,2012-06-30--2013-12-31,50.0万元,主持
6. 铁道部科技司:高速铁路列车追踪接近预警系统方案研究,2011-10-25--2012-12-25,50.0万元,主持
7. 铁道部科技司:北斗卫星导航系统铁路应用技术研究——基于卫星导航系统铁路定位应用技术研究,50.0万元,2011-07-01--2012-07-31,主持
8. 北京交大创新科技中心:那曲物流中心GPS测量、数据处理及现场验证,2009-03-20--2009-06-30,96.0万元,主持
9. 科技部“863”:低成本列车运行控制系统的关键技术,2007-12-15--2009-12-15,100.0万元,主持
10. 国家自然科学基金“重点”:列车运行控制系统的仿真理论与方法,2008-01-01--2010-12-31,200.0万元,主持
11. 铁道部科技司:青藏线ITCS系统分析与研究,2006-09-01--2007-09-30,80.0万元,主持
12. 北京交大创新科技中心:青藏线GPS数据处理和验证,2005-06-01--2006-08-31,480.0万元,主持
13. 铁道部科技司:青藏线列车卫星定位技术及信息传输系统的试验,2003-06-01--2005-12-31,100.0万元,主持
14. 铁道部业务局:青藏线GPS测试数据处理及验证,2005-06-01--2006-12-01,100.0万元,主持

### 教学工作

本科生课程:

现代交通控制系统  
自动化类专业导论  
铁道信号专业导论

研究生课程:

智能交通系统

博士生课程:

智能交通工程

### 论文/期刊

1. 期刊->赵林海,蔡伯根;许俊杰;冉义奎,Study of the Track-Train Continuous Information Transmission Process in a High-Speed Railway,IEEE Transactions on Intelligent Transportation Systems,1,15,201402,112,121
2. 期刊->王剑,张福隆;蔡伯根;上官伟,ERTMS-Regional发展综述,铁道学报,1,34,201201,60,64
3. 期刊->周晓庆,蔡伯根;王剑;上官伟,磁阻车辆检测器的低功耗设计,微型机与应用,1,30,201101,59,62
4. 期刊->刘江,蔡伯根;唐涛;王剑;上官伟,低成本列车组合定位系统容错算法设计,铁道学报,1,33,201101,39,46
5. 期刊->靳洪都,蔡伯根;王剑;安毅;上官伟,高铁追踪接近预警系统车载设备的设计与实现,铁道通信信息,5,49,201305,73,77
6. 期刊->王剑,蔡伯根;惠希云;上官伟,基于GNSS的虚拟应答器捕获算法的研究,铁道学报,4,33,201104,73,79
7. 期刊->李伟,王剑;蔡伯根;上官伟,一种列车完整性监测系统的设计,铁路计算机应用,7,21,201207,1,4
8. 期刊->李长春,蔡伯根;上官伟;王剑,基于Web墨卡托投影的地图算法研究与实现,基于Web墨卡托投影的地图算法研究与实现,12,29,201212,4793,4796
9. 期刊->王剑,刘江;上官伟,蔡伯根,基于道岔曲线信息的列车定位方法研究,交通运输系统工程与信息,2,10,2010,64,69
10. 期刊->耿杰,蔡伯根;王剑;上官伟,基于深度优先搜索的铁路站场遍历算法研究,铁道学报,4,34,201204,51,56
11. 期刊->蔡伯根,严细辉;王剑;上官伟,列车轨道占用自动识别算法,交通运输工程学报,3,10,2010,111,126

12. 期刊->苟晨曦,蔡伯根,唐涛,上官伟,无线闭塞中心测试案例生成方法,交通运输工程学报,4,11,201108,114,122
13. 期刊->王勤龙,蔡伯根,王剑,上官伟,刘江,一种适用于列车预警系统的 GPS 差分基站设计,铁道通信信号,4,49,201304,61,65
14. 期刊->樊玉明,蔡伯根,王剑,上官伟,安毅,基于北斗-陀螺仪组合定位的轨道占用判别方法研究,铁道学报,9,35,201309,46,51
15. 期刊->严细辉,蔡伯根,宁滨,上官伟,基于差分进化的高速列车运行操纵的多目标优化研究,铁道学报,9,35,201309,65,71
16. 期刊->严细辉,蔡伯根,宁滨,上官伟,基于矢量跟踪的GPS/INS深耦合列车自主定位算法研究,铁道学报,1,36,201401,62,69
17. 期刊->刘江,蔡伯根,王云鹏,王剑,Generating Enhanced Intersection Maps for Lane Level Vehicle Positioning based Applications,Procedia - Social and Behavioral Sciences,96,-,201311,2395,2403
18. 期刊->上官伟,刘朋慧,蔡伯根,邵泳哲,UML-HAL协同建模方法及其在动车仿真中的应用,交通运输工程学报,4,13,201308,108,115
19. 期刊->刘江,蔡伯根,王剑,Precise Position Estimation of High Speed Railway Train for Collision Early Warning System,International Journal of Advancements in Computing Technology,5,8,201304,1155,1166
20. 期刊->刘江,蔡伯根,王云鹏,王剑,A Lane Level Positioning based Cooperative Vehicle Conflict Resolution Algorithm for Unsignalized Intersection Collisions,Computers & Electrical Engineering,39,5,201304,1381,1398
21. 期刊->刘江,蔡伯根,王云鹏,Status and Prospects of Autonomous Vehicle Positioning Method for Cooperative Vehicle Infrastructure System,International Review on Computers and Software,8,1,201301,327,340
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23. 期刊->蔡伯根,上官伟,王剑,刘江,樊玉明,基于北斗卫星导航系统的列车安全定位保障方法,中国铁路,4,1,201304,8,17
24. 期刊->张含,蔡伯根,上官伟,李四辉,基于多分辨率建模的车路协同系统仿真场景设计与实现,系统仿真技术,1,9,201301,52,60
25. 期刊->尹青,蔡伯根,上官伟,苟晨曦,故障注入方法在列车运行控制仿真系统中的应用,铁道通信信号,1,49,201301,66,70
26. 期刊->安毅,宁滨,蔡伯根,上官伟,王剑,GPS/CP车辆定位与交叉口冲突检测方法,交通运输工程学报,1,13,201302,104,113
27. 期刊->安毅,蔡伯根,宁滨,王剑,上官伟,基于GPS和虚拟卫星的列车完整性检查方法研究,铁道学报,9,34,201209,40,44
28. 期刊->上官伟,蔡伯根,刘振国,王剑,李四辉,基于HLA的列控系统多车仿真策略研究,铁道学报,8,34,201208,57,63
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30. 期刊->王忠立,蔡伯根,衣法臻,Reviews on Planar Region Detection for Visual Navigation of Mobile Robot under Unknown Environment,Springer Lecture Notes in Electrical Engineering,12,12,201112,1,9
31. 期刊->陈德旺,唐涛,曹芳,蔡伯根,An integrated error-detection method for GPS data points measured in Qinghai-Tibet Railway, Expert systems with Applications,2,39,201202,2220,2226
32. 期刊->单秦,闻映红,蔡伯根,弓网系统的无线电干扰特性研究,华中科技大学学报(自然科学版),No.9,Vol.39,201109,20,24
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34. 期刊->上官伟,蔡伯根,王晶晶,王剑,王利,时速250kmh以上的高速列车制动模式分析,交通运输工程学报,3,11,201106,41,46
35. 期刊->上官伟,王晶晶,蔡伯根,王剑,梁前浩,GPS微弱信号捕获跟踪算法,交通运输工程学报,5,10,2010
36. 期刊->上官伟,苟晨曦,蔡伯根,王剑,基于故障注入的CTCS-3级列控系统可靠性评估技术研究,铁道通信信号,7,46,2010
37. 期刊->上官伟,蔡伯根,王艳,王晶晶,王亚菊,基于UML与CPN的CTCS-3级列控系统建模与验证方法研究,铁道通信信号,5,46,2010
38. 期刊->蔡伯根,上官伟,李小琴,王剑,严细辉,王晶晶,基于多分辨率建模方法的CTCS-3级列控系统仿真技术,中国铁道科学,4,31,2010
39. 期刊->董海荣,宁滨,蔡伯根,侯忠生,Automatic Train Control System Development and Simulation for High-speed Railways,IEEE Circuits and Systems Magazine,2,10,2010
40. 期刊->刘江,蔡伯根,唐涛,王剑,A PCA Based Fault Detection and Isolation Method for Train Locating System,Applied Mechanics and Materials,2010,20-23,2010
41. 期刊->刘江,蔡伯根,唐涛,王剑,基于GPS与惯性测量单元的列车组合定位系统,中国铁道科学,2010(1),31,2010
42. 期刊->陈德旺,蔡伯根,Modeling and Algorithms of GPS Data Reduction for the Qinghai-Tibet Railway,IEEE transactions on intelligent transportation systems,3,11,2010
43. 期刊->刘江,蔡伯根,唐涛,王剑,基于GPS与惯性测量单元的列车组合定位系统,中国铁道科学,1,31,2010

44. 期刊->蔡伯根,上官伟;李小琴;王剑,基于多分辨率建模的CTCS-3级列控系统仿真支撑技术,北京交通大学学报,2,34,2009
45. 期刊->王剑,刘江;上官伟;蔡伯根,基于道岔曲线信息的列车定位方法研究,交通运输系统工程与信息,2,10,2009
46. 期刊->王剑,张辉;蔡伯根;上官伟,基于GNSS的轨道占用识别技术综述,铁道学报,2,32,2009
47. 期刊->上官伟,王剑;蔡伯根;刘江,低成本列车运行控制系统专用数据库及定位匹配算法研究,北京交通大学学报,2,34,2009
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49. 期刊->刘江,蔡伯根;王剑;唐涛,基于主成分分析的列车组合导航系统故障检测与隔离算法,交通运输系统工程与信息,5,9,2009
50. 期刊->徐田华,唐涛;邵春海;蔡伯根,Dependability analysis of the Data Communication System in Train Control System,Science in China Series E,52,9,2009
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55. 期刊->陈德旺,蔡伯根;王剑;唐涛,轨道交通GPS数据约简的数学模型与算法研究,铁道学报,4,30,2008
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57. 期刊->程君,蔡伯根,基于GNSS/GIS的平交道口智能控制,中国铁路,8,1,2007
58. 期刊->惠怀志,蔡伯根,组合导航信息融合算法的研究,北京交通大学学报(自然科学版),2,31,2007
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62. 期刊->刘嘉,穆建成;蔡伯根,多轨迹GPS数据生成高精度列车控制用数字电子地图的方法,铁道通信信号,5,43,2007
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64. 期刊->陈德旺,蔡伯根;唐涛,轨道交通GPS错误数据检测算法研究及验证,中国铁道科学,4,28,2007
65. 期刊->秦皓,王剑;蔡伯根,消除多径干扰在列车定位的研究,科技信息(学术版),2,2007
66. 期刊->赵丽丽,蔡伯根,列车安全运行信息监视系统,科技信息,2,2007
67. 期刊->张燕,蔡伯根,城市交通信息发布系统的设计与实现,北京交通大学学报,5,31,2007
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73. 期刊->孙二敬,蔡伯根,基于LabVIEW的多传感器信息采集平台,北京交通大学学报,5,29,2005
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77. 期刊->黄斐,蔡伯根,基于虚拟仪器技术的智能交通车载信息采集平台,北方交通大学学报,12,2003
78. 期刊->张静,蔡伯根;吴建平,移动检测技术的研究,北方交通大学学报,6,2003
79. 期刊->王剑,蔡伯根,Windows CE下串行通信的实现,单片机与嵌入式系统应用,1,1,2003
80. 期刊->蔡伯根,综合GPS/GIS在交通监控系统中的应用,交通科技,5,2002
81. 期刊->蔡伯根,GSM短消息在GPS车辆监控中的应用,电子技术应用,285,28,2002
82. 期刊->蔡伯根,综合GPS/GIS应用与铁路列车控制系统,铁路计算机应用,1,2002
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#### 专著/译著

**专利**

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**软件著作权**

1. 2013SRBJ0295 车路协同仿真平台运行管理软件V1.0 2013-05-23
2. 2013SRBJ0264 GPS轨道GIS图编辑软件 V1.0 2013-05-23
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**获奖与荣誉**

中国铁道学会科学技术奖一等奖, 2011 茅以升铁道科学技术奖, 2010 中国铁道学会科学技术奖二等奖, 2007 第五届詹天佑铁道科技青年奖, 2001 铁道部电务专业中青年技术专家, 1996

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